

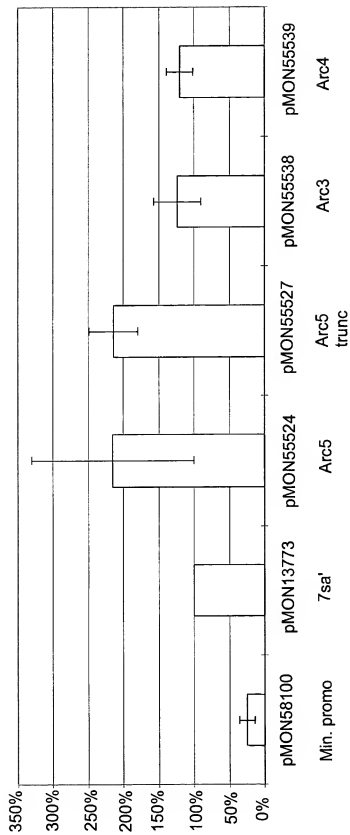
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91
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P-PvArc3-417683-FL ATTGTTT... .CACCTACAA TGATAATATA TTA AAAAGTG AACTTTAAAT
P-Pv-Arc5-FL ATTTTITTTCA CATACAATTA TGATAATATA TTA AAAAGTG AACTTTAAAT
391 440
P-PvArc4-417775-FL TAATTTACA. .... .AGTTAAATT AATT CAGCTT GTCTCCTTGA
P-PvArc3-417683-FL TAATTTACA. .... .AGTTAAATT AATT CAGCTT GTCTCCTTGA
P-Pv-Arc5-FL TAATTTACAA TATATAGATT CAGTTAAATC AATT CAGCTT GTCTCCTTGA
801 850
P-PvArc4-417775-FL TGT TTTATGCT CTTTTCGGAA TTAATTAAGT TTTAGTTGTA ATTGTAATAA
P-PvArc3-417683-FL TGT TTTATGCT CTTTTCGGAA TTAATTAAGT TTTAGTTGTA ATTGTAATAA
P-Pv-Arc5-FL TGT TT..... .CTGTAATAA
901 950
P-PvArc4-417775-FL TTAGTCACGA GTGTGTATCC TCACCCCTCA CAAACAACAT TTCAAGAAAA
P-PvArc3-417683-FL TTAGTCACGA GTGTGTATCC TCACCCCTCA CAAACAACAT TTCAAGAAAA
P-Pv-Arc5-FL CTAGTCATGA G..... .CACCCTCA GAGACAAGAT TTCAAGAAAA
1351 1400
P-PvArc4-417775-FL ATA..... .AAATT TTATAAAAAG GGAAAATCAA ATTAGAATTT
P-PvArc3-417683-FL ATA..... .AAATT TTATAAAAAG GGAAAATCAA ATTAGAATTT
P-Pv-Arc5-FL ATATATAATA TATACAATTA AATAAAAAG GGAAAATCAA ATTAGAATTT
1751 1800
P-PvArc4-417775-FL CGTTGTTTGT TAATTGTTAA TTTTATATTA TTATTTCTCC CTC AAATAAT
P-PvArc3-417683-FL CGTTGTTTGT TAATTGTTAA TTTTATATTA TTATTTCTCC CTC AAATAAT
P-Pv-Arc5-FL CGTTGTTTAA TAATTGTTAA TTTGGAGTT. .... .GAATAAT
1801 1850
P-PvArc4-417775-FL ATTATAAAAG ATAATGATTC .....GATT TTGCATTGTG TGTGTATAA
P-PvArc3-417683-FL ATTATAAAAG ATAATGATTC GATTTTGATT TTGCATTGTG TGTGTATAA
P-Pv-Arc5-FL AAAATGAAAG AAAAAAGTTG GA...AAGATT TTGCATTGTG TGTGTATAA

P-PvArc4-417775-FL (SEQ ID NO: 10)
P-PvArc3-417683-FL (SEQ ID NO: 9)
P-Pv-Arc5-FL (SEQ ID NO: 11)

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Figure 1

*Figure 2*

10015637 121701

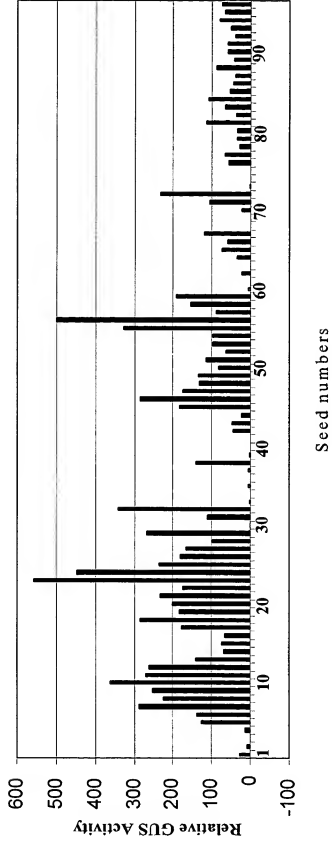


Figure 3

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!!NA_MULTIPLE_ALIGNMENT 1.0
PileUp of: @/usr4/people/ppdubo/.seqlab-mendel/pileup_1.list

Symbol comparison table: GenRunData:pileupdna.cmp  CompCheck: 6876

pileup_1.msf  MSF: 1903  Type: N  July 12, 2000 09:15  Check: 8196 ..

Name: P-PvArc4-417775-FL  Len: 1903  Check: 2130  Weight: 1.00
Name: P-PvArc3-417683-FL  Len: 1903  Check: 8855  Weight: 1.00
Name: P-Pv-Arc5-FL        Len: 1903  Check: 7211  Weight: 1.00

      1
P-PvArc4-417775-FL  CTGCAGTCCT ACATAATTCT TCTACCGTTA ACCGTCAAAT CATATTTTCA
P-PvArc3-417683-FL  CTGCAGTCCT ACATAATTCT TCTACCGTTA ACCGTCAAAT CATATTTTCA
      P-Pv-Arc5-FL    CTGCAGTCCT ACATAATTCT TCTACAGTTA ACCTTCAAAT CATATTTTCA

      51
P-PvArc4-417775-FL  TTATTCACAA ATATCTAGTG TCTCATACGA ATAAATATAT ATTGTTT...
P-PvArc3-417683-FL  TTATTCACAA ATATCTAGTA TCTCATACGA ATAAATATAT ATTGTTT...
      P-Pv-Arc5-FL    TTATTCACAA ATATCTAGTC ATTCATACGA ATAAATATAT ATTTTTTCA

      101
P-PvArc4-417775-FL  .CACCTACAA TGATAATATA TTAAAAAGTG AACTTTAAAT GTAATTTAAT
P-PvArc3-417683-FL  .CACCTACAA TGATAATATA TTAAAAAGTG AACTTTAAAT GTAATTTAAT
      P-Pv-Arc5-FL    CATACAATTA TGATAATATA TTAAAAAGTG AACTTTAAAT TTAATTTAAT

      151
P-PvArc4-417775-FL  CTCATAAAAT CGACTTATAA AATGAGATT TACCTACGA TCGATAAAAA
P-PvArc3-417683-FL  CTCATAAAAT CGACTTATAA AATGAGATT TACCTACGA TCGATAAAAA
      P-Pv-Arc5-FL    CTTATAAAAT CAACTTATAA AATGAGATT CTACCTACGA TTAATAAAAA

      201
P-PvArc4-417775-FL  TAACTTTAAT ATCATATTAA GAAATAAACT TTAACCTAA CTCAATTTTA
P-PvArc3-417683-FL  TAACTTTAAT ATCATATTAA GAAATAAACT TTAACCTAA CTCAATTTTA
      P-Pv-Arc5-FL    TAACTTTGAT ATCATATTAA AAAATAAACT TTAACCTAA CTCAACTTTA

      251
P-PvArc4-417775-FL  TAAAACCAAT TTATAAAATA AAATTTACAC TCACTTATAT ATTATAAAAT
P-PvArc3-417683-FL  TAAAACCAAT TTATAAAATA AAATTTACAC TCACTTATAT ATTATAAAAT
      P-Pv-Arc5-FL    TAAAACCAAT TTATAAAATA AAATTTACAC TCACTTATAT ATTATAAAAT

      301
P-PvArc4-417775-FL  AAAATAGTTT TTAGGTGACG TGAATCTCC ATCCGATTAA TCAATATTTT
P-PvArc3-417683-FL  AAAATAGTTT TTAGGTGACG TGAATCTCC ATCCGATTAA TCAATATTTT
      P-Pv-Arc5-FL    GAAATAGTTT TTAGGTGACG TGAATCTCC ATCCGATTAA TCAATATTTT

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Figure 4a

10015637.121701

	351		400
P-PvArc4-417775-FL	CTGATGTTAT	TGTTATTATA	GAAACTAAAA ACATGCCAAA TAATTTACAA.
P-PvArc3-417683-FL	CTGATGTTAT	TGTTATTATA	GAAACTAAAA ACATGCCAAA TAATTTACAA.
P-Pv-Arc5-FL	ATGATGTTAT	TGTTATTATA	GAAACTAAAA ACATGCCAAA TAATTTACAA
	401		450
P-PvArc4-417775-FL	.....	.AGTTAAATT	AATTCAGCTT GTCTCCTTGA CTAATAAAAC
P-PvArc3-417683-FL	.....	.AGTTAAATT	AATTCAGCTT GTCTCCTTGA CTAATAAAAC
P-Pv-Arc5-FL	TATATAGATT	CAGTTAAATC	AATTCAGCTT GTCTCCTTGA CTAATAAAAC
	451		500
P-PvArc4-417775-FL	ACAACTTTAG	ACTATTATTC	AGATTTACAC TTCATCTCTC ATGATATCCC
P-PvArc3-417683-FL	ACAACTTTAG	ACTATTATTC	AGATTTACAC TTCATCTCTC ATGATATCCC
P-Pv-Arc5-FL	AAACTTTAG	ACTATTATTC	AGATTTACAC TTCATCTCTC ATGATATCCC
	501		550
P-PvArc4-417775-FL	TCAAAGTGAA	TTTCATTCAT	GGCACCATT TATATAATCAA CAATTTTAAA
P-PvArc3-417683-FL	TCAAAGTGAA	TTTCATTCAT	GGCACCATT TATATAATCAA CAATTTTAAA
P-Pv-Arc5-FL	TCAAAGTGAA	TTTCATTCAT	GGCACCATT TATATAATCAA CAATTTTAAA
	551		600
P-PvArc4-417775-FL	AAGATGCAAA	TTTGACTAG	TAAATGCCTC AATGTCCCTG ATAAACACAC
P-PvArc3-417683-FL	AAGATGCAAA	TTTGACTAG	TAAATGCCTC AATGTCCCTG ATAAACACAC
P-Pv-Arc5-FL	AATATGCAAA	TTTGATCCAG	TAAATGCCTT AATGTCCCTG ATAAACACAA
	601		650
P-PvArc4-417775-FL	ACAAAAAAAC	CTTTTCATAT	TTTTTCTTA TTAATAAAG AAATTCATTG
P-PvArc3-417683-FL	ACAAAAAAAC	CTTTTCATAT	TTTTTCTTA TTAATAAAG AAATTCATTG
P-Pv-Arc5-FL	AAAAAAA.	.AATTCATAT	TTTTTCTTA TTAATAAAG AAGTTCATTG
	651		700
P-PvArc4-417775-FL	TAAGAGAAAT	TAGGATCCTT	CAATAGAAAA TGTGTTATTT CCTCATCACC
P-PvArc3-417683-FL	TAAGAGAAAT	TAGGATCCTT	CAATAGAAAA TGTGTTATTT CCTCATCACC
P-Pv-Arc5-FL	TAAGAGAAAT	TAGGATCCTT	CAATAGAAAA TGTGTTATTT CCTCATCACC
	701		750
P-PvArc4-417775-FL	AGGAAAAAAA	GGACAACAGT	TAACACAACA AATTTATGTT TCATTTGAGA
P-PvArc3-417683-FL	AGGAAAAAAA	GGACAACAGT	TAACACAACA AATTTATGTT TCATTTGAGA
P-Pv-Arc5-FL	AG..ACAAAG	GGGCAACAGT	TAACAAAACA AATTTATGTT TCATTTGAGA
	751		800
P-PvArc4-417775-FL	TTAAGGAAGG	TAAGGAAGAA	AAAAGATTAA AAAAAATGTC CTTATCTCTT
P-PvArc3-417683-FL	TTAAGGAAGG	TAAGGAAGAA	AAAAGATTAA AAAAAATGTC CTTATCTCTT
P-Pv-Arc5-FL	TTAAGGAAGG	TAAGGAAGAA	AAAAGATTAA AAAAAATGTC CTTATCTCTT

Figure 4b

	801		850
P-PvArc4-417775-FL	TGTTTATGCT	CTTTTCGGAA	TTAATTAAGT TTTAGTTGTA ATTGTAATAA
P-PvArc3-417683-FL	TGTTTATGCT	CTTTTCGGAA	TTAATTAAGT TTTAGTTGTA ATTGTAATAA
P-Pv-Arc5-FL	TGTTT.....		.CTGTAATAA
	851		900
P-PvArc4-417775-FL	TAATATAAGA	GACTTAACT	TTTAATATAA TAATTATAAT TAGGTTTTTT
P-PvArc3-417683-FL	TAATATAAGA	GACTTAACT	TTTAATATAA TAATTATAAT TAGGTTTTTT
P-Pv-Arc5-FL	TAATATAAGA	GACTTAACT	TTTAATATAA TAATTGTAAT TAGG..TTTT
	901		950
P-PvArc4-417775-FL	TTAGTCACGA	GTGTGTATCC	TCACCCCTCA CAAACAACAT TTCAAGAAAA
P-PvArc3-417683-FL	TTAGTCACGA	GTGTGTATCC	TCACCCCTCA CAAACAACAT TTCAAGAAAA
P-Pv-Arc5-FL	CTAGTCATGA	G.....	.CACCCTCA GAGACAAGAT TTCAAGAAAA
	951		1000
P-PvArc4-417775-FL	CAATTTTGTT	AAACATCTTA	TTAGAAACTT TTAGCAAAGT CTGGAAGTTA
P-PvArc3-417683-FL	CAATTTTGTT	AAACATCTTA	TTAGAAACTT TTAGCAAAGT CTGGAAGTTA
P-Pv-Arc5-FL	CAATTTTGTT	AAACATCTTA	TTAGAAACTT TTAGTTAAGT CTGGAAGTTA
	1001		1050
P-PvArc4-417775-FL	GAATTAAACA	AAAAATTAC	ACACACGAGG AACACAATAA ACCTACTATC
P-PvArc3-417683-FL	GAATTAAACA	AAAAATTAC	ACACACGAGG AACACAATAA ACCTACTATC
P-Pv-Arc5-FL	GAATTAAACA	AAAAAAAT.T	ACACACGAGA AACACAATAA ACCCACTACC
	1051		1100
P-PvArc4-417775-FL	GTCAGGTTAT	CATAAGGATG	AAATGTTTTG ATACCATTAA ATATAACACA
P-PvArc3-417683-FL	GTCAGGTTAT	CATAAGGATG	AAATGTTTTG ATACCATTAA ATATAACACA
P-Pv-Arc5-FL	GTCAGGTTAT	CATAAGGATG	AAATGTTTTG ATATCATTTAA ATATAACACA
	1101		1150
P-PvArc4-417775-FL	CACAAAAATA	CATGTAATTA	TAACAATACA TGTTATAC.. ATATTTTGA
P-PvArc3-417683-FL	CACAAAAATA	CATGTAATTA	TAACAATACA TGTTATAC.. ATATTTTGA
P-Pv-Arc5-FL	CACAAAAATA	CATCTAATTA	TAACAATATA TGTTATACAT ATATTTTGT
	1151		1200
P-PvArc4-417775-FL	AAAAACTTAA	AGTTTTTCAA	AACATTCTTA ATACATGATT AGAGCTTATA
P-PvArc3-417683-FL	AAAAACTTAA	AGTTTTTCAA	AACATTCTTA ATACATGATT AGAGCTTATA
P-Pv-Arc5-FL	AAAAACTTAG	AGTTTTTCAA	AACATTCTTA ATACATGATT AGAGTTTATA
	1201		1250
P-PvArc4-417775-FL	GAAATACAAA	TATTTAAAAA	ATATAACTTT AAAAAACAT CTAAAGTCT.
P-PvArc3-417683-FL	GAAATACAAA	TATTTAAAAA	ATATAACTTT AAAAAACAT CTAAAGTCT.
P-Pv-Arc5-FL	GAAATACAAA	TATTTAAAAA	ATATAAATTTT AAAAAACAT TCTAAAGTCA

Figure 4c

	1251		1300
P-PvArc4-417775-FL	CTCATATCCT	CTCACACCGG	TGAAATCATT TACTCGTAGT ATAGTACCGT
P-PvArc3-417683-FL	CTCATATCCT	CTCACACCGG	TGAAATCATT TACTCGTAGT ATAGTACCGT
P-Pv-Arc5-FL	CTCAGATCCT	CTCACACCTG	TGTGATCATT TAGTCAT.GT ATGTAGTACA
	1301		1350
P-PvArc4-417775-FL	GTCATAATAG	TTCACAACAC	AGTAAAAAGA ATAAGAATAA ACTAGTGAAT
P-PvArc3-417683-FL	GTCATAATAG	TTCACAACAC	AGTAAAAAGA ATAAGAATAA ACTAGTGAAT
P-Pv-Arc5-FL	ATCATTGTAG	TTCACAACAG	AGTAAAAATA ATAAGGATAA ACTAGGGAAT
	1351		1400
P-PvArc4-417775-FL	ATA. ....	.....AAATT	TTATAAAAAG GGAAAAATCAA ATTAGAATTT
P-PvArc3-417683-FL	ATA. ....	.....AAATT	TTATAAAAAG GGAAAAATCAA ATTAGAATTT
P-Pv-Arc5-FL	ATATATAATA	TATACAATTA	AATAAAAAAG GGAAAAATCAA ATTAGAATTT
	1401		1450
P-PvArc4-417775-FL	TTGATTCCCC	ACATAACACA	ACTCACCATG CACGCTGCCA CCTCAGCTCC
P-PvArc3-417683-FL	TTGATTCCCC	ACATAACACA	ACTCACCATG CACGCTGCCA CCTCAGCTCC
P-Pv-Arc5-FL	TTGATTCCCC	ACATGACACA	ACTCACCATG CACGCTGCCA CCTCAGCTCC
	1451		1500
P-PvArc4-417775-FL	CTCCTCTCCA	CACATGTCTC	ATGTCACTTT CGACTTTGGC TTTTTCACTA
P-PvArc3-417683-FL	CTCCTCTCCA	CACATGTCTC	ATGTCACTTT CGACTTTGGC TTTTTCACTA
P-Pv-Arc5-FL	CTCCTCTCCA	CACATGTCTC	ATGTCACTTT CGACTTTGGC TTTTTCACTA
	1501		1550
P-PvArc4-417775-FL	GGAGACAACT	CGCCATGCAC	GCTGCCACGT CAGCTCCTTC CTCTTCCCAT
P-PvArc3-417683-FL	GGAGACAACT	CGCCATGCAC	GCTGCCACGT CAGCTCCTTC CTCTTCCCAT
P-Pv-Arc5-FL	TGACACAACT	CGCCATGCAT	GTTGCCACGT GAGCTCCTTC CTCTTCCCAT
	1551		1600
P-PvArc4-417775-FL	GATGACACCA	CTGGGCATGC	ATGATGCCAC CTCAGCTCCC ACCTCTTCTC
P-PvArc3-417683-FL	GATGACACCA	CTGGGCATGC	ATGATGCCAC CTCAGCTCCC ACCTCTTCTC
P-Pv-Arc5-FL	GATGACACCA	CTGGGCATGC	ATGCTGCCAC CTCAGCTCCC ACCTCTTCTC
	1601		1650
P-PvArc4-417775-FL	ATTATGAGCC	TACTGGCCAT	GCACACTGCC ACCTCAGCAC TCCTCTCACT
P-PvArc3-417683-FL	ATTATGAGCC	TACTGGCCAT	GCACACTGCC ACCTCAGCAC TCCTCTCACT
P-Pv-Arc5-FL	ATTATGAGCC	TACTGGCCAT	GCACACTGCC ACCTCAGCAC TCCTCTCACT
	1651		1700
P-PvArc4-417775-FL	TCCCATTGCT	ACCTGCCAAA	CCGCTTCTCT CTATAAATAT CTCTTTAAAT
P-PvArc3-417683-FL	TCCCATTGCT	ACCTGCCAAA	CCGCTTCTCT CTATAAATAT CTCTTTAAAT
P-Pv-Arc5-FL	TCCCATTGCT	ACCTGCCAAA	CCGCTTCTCT CCATAAATAT CTATTTTAAAT

Figure 4d

	1701		1750
P-PvArc4-417775-FL	TTAAACTAAT TATTTTCATAT ACTTTTTTGA TGACGTGGAT GCATTGCCAT		
P-PvArc3-417683-FL	TTAAACTAAT TATTTTCATAT ACTTTTTTGA TGACGTGGAT GCATTGCCAT		
P-Pv-Arc5-FL	TTAAACTAAT TATTTTCATAT ACTTTTTTGA TGACGTGGAT GCATTGCCAT		
	1751		1800
P-PvArc4-417775-FL	CGTTGTTTGT TAATTGTTAA TTTTATATTA TTATTTCTCC CTCAAATAAT		
P-PvArc3-417683-FL	CGTTGTTTGT TAATTGTTAA TTTTATATTA TTATTTCTCC CTCAAATAAT		
P-Pv-Arc5-FL	CGTTGTTTAA TAATTGTTAA TTTGGAGTT. GAATAAT		
	1801		1850
P-PvArc4-417775-FL	ATTATAAAAG ATAATGATTC .....GATT TTGCATTGT TGTGTATAA		
P-PvArc3-417683-FL	ATTATAAAAG ATAATGATTC GATTTTGATT TTGCATTGT TGTGTATAA		
P-Pv-Arc5-FL	AAATGAAAG AAAAAAGTTG GA..AAGATT TTGCATTGT TGTGTATAA		
	1851		1900
P-PvArc4-417775-FL	ATAGAGAAGA GAGTGATGGT TAATGCATGA ATGCATGATC AGATCTGCCA		
P-PvArc3-417683-FL	ATAGAGAAGA GAGTGATGGT TAATGCATGA ATGCATGATC AGATCTGCCA		
P-Pv-Arc5-FL	ATAGAGAAGA GAGTGATGGT TAATGCATGA ATGCATGATC AGATCTGCCA		
	1901		
P-PvArc4-417775-FL	TGG (SEQ ID NO: 13)		
P-PvArc3-417683-FL	TGG (SEQ ID NO: 12)		
P-Pv-Arc5-FL	TGG (SEQ ID NO: 14)		

Figure 4e

	Promoter	5' UTR	Coding sequence	3' terminator
pMON55534	tARC5	ARC5	GUS	ADR12
pMON55535	tARC5	ARC5	GUS	E9
pMON55540	tARC5	GmHSP17.9	GUS	E9
pMON55569	tARC5	GmdSSU	GUS	E9
pMON55570	tARC5	PetHSP70	GUS	E9
pMON55575	tARC5	ARC5	GUS	Arc5

Figure 5

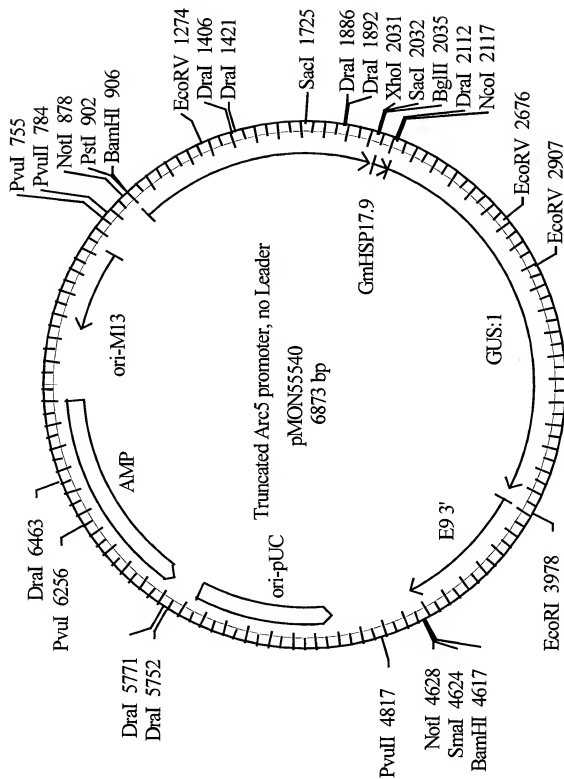


Figure 6

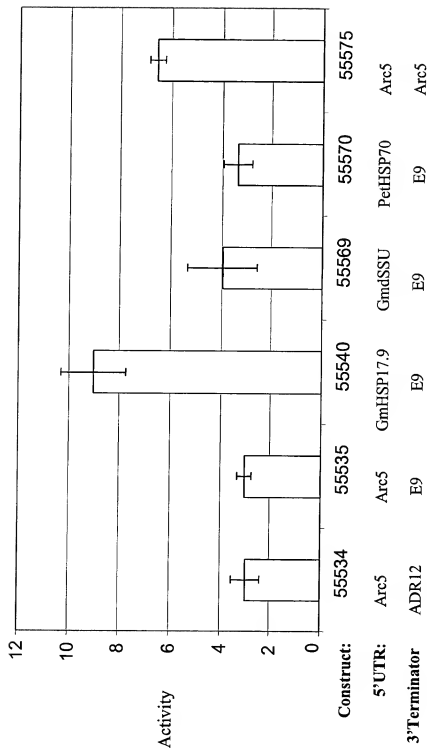


Figure 7